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DNA Research: Wall Street Cooling on Big Cell

Genetic engineering seems to have lost its magic touch on Wall Street.

The level of interest remains high, particularly in small companies such as the San Francisco-based Genentech, which startled even experienced analysts with an initial offering last October that leapt from \$35 to almost \$90 on its first day of trading. But it has since dropped back to near its starting point; meanwhile, investors are becoming more cautious about an industry whose promised pay-offs are, at best, still several years down the road.

The most obvious manifestation of this change of heart has been the decision of E.F. Hutton, one of Wall Street's leading investment houses, to withdraw ambitious plans it had announced in March to raise money from established investment institutions to finance a

ticular Johnson and Johnson, which has already made agreements with a number of research institutions. In May, for example, the company announced its support for a program to develop synthetic vaccines and related pharmaceutical compounds with the Scripps Clinic and Research Foundation at La Jolla in California.

E.F. Hutton's second thoughts reflect a growing feeling that investors want more evidence that the genetic-engineering industry can come up with more than promises. The company points out that many of its potential investors are not high-risk venture capitalists, but banks, insurance companies, and pension funds, which are more careful about where they put their money.

"These type of people are now beginning to look for results," says Dr. Zsolt Harsanyi, Vice-President of DNA Science and previously Director of the Office of Technology Assessment's (OTA) two-year analysis of the commercial prospects for biotechnology. "They have not lost faith in biotechnology, but they want to see something come out. Once someone comes up with a product, like a veterinary vaccine that has never been done before, then things will get easier again."

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Big Health Charities Coming Under Critical Scrutiny—Page 8

range of university-based research projects through a new company, DNA Sciences. The scheme was largely the brain-child of Hutton analyst Nelson Schneider, for several years one of Washington's most enthusiastic promoters of the commercial potential of recombinant DNA research.

Hutton's initial proposal was to raise \$50 million from a variety of sources. The centerpiece was a deal which had been arranged with the Weizmann Institute of Science in Israel for collaboration with the company on a variety of research topics, from the production of interferon to increasing agricultural crop yields. This deal has now been dropped and the money that was collected has been returned to investors, as is legally required. DNA Sciences hopes to reattract much of it with a new arrangement, selling individual projects or groups of projects as potential tax shelters. But the scope of the new proposal is considerably less ambitious—and there is still uncertainty whether E.F. Hutton, even with its considerable experience in selling tax shelters across the world, will be able to get this particular one constructed.

The initial deal seems to have fallen through for a number of reasons. Prominent among them is that Hutton's legal advisers foresaw potential problems in mixing "passive" and "active" investors. The former includes Citibank and Allied Corporation, which were merely seeking an attractive long-term investment. Others, however, sought a closer involvement, in par-

In Brief

The academic job market for scientists and engineers grew at an average annual rate of three per cent during 1978-80, NSF reports, but the growth was concentrated at big research universities. The top 100 in federal R&D dollars reported a four-per-cent employment boost while all others registered a 7.1-per-cent decline in research-related employment during that period.

Meanwhile, the Reagan Administration is showing some interest in the same educational problems that were long pondered by the Carter Administration. White House Science Adviser George Keyworth has asked NSF to supply data on science and engineering education. And, at the slowly evaporating Department of Education, Secretary Bell, worried about drooping standards and performance in the schools, is setting up a national commission to examine the "decline in quality education."

Philip Smith, a top aide to White House Science Adviser Guy Stever in the Ford Administration and Frank Press in the Carter Administration, will soon join the staff of the National Academy of Sciences, where Press was recently installed as President.

...Investors Demanding More than Promises

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According to Harsanyi, whose OTA report predicted that recombinant DNA research will eventually become the basis for a multi-billion dollar industry, an apparent softening of demand on Wall Street is less a reflection of any general judgment than a comment on the way that the prospects for individual firms are seen.

Genentech, for example, still remains a favorite for investors. Although the company has taken an aggressive, sometimes even abrasive, stance in promoting itself, it has also been able to announce important scientific developments. For example, in March the company announced that it had successfully used recombinant DNA techniques to produce a new type of hormone that is expected to increase the production of meat and milk from cattle. And the company is testing a new form of human insulin which it says will be on the market by the end of next year.

But even this type of news has failed to restore any zip to trading; Genentech's shares are currently valued at \$32, having remained around this level for the past few months. Interest in bio-technology remains strong, however, as evidenced by the response to the new offerings in monoclonal antibodies, which are rapidly finding a range of uses as markers for specific types of cells. At the beginning of August a new company called Monoclonal Antibodies of Palo Alto successfully went public with an issue of shares at \$10, raising \$20 million.

The company, in this case, had the advantage of being able to define quite closely its most likely short-term products. Top of the list are pregnancy testing kits—for which there is currently a market of about \$60 million in the US—and other kits for testing for leukemia. Close on the heels of Monoclonal Antibodies is another California company entering the same market, Hybritech. This company has just announced that it will also be going public in the near future, and has already received approval from the Food and Drug Administration for some of its diagnostic kits. At present Hybritech has about \$13 million in capital, raised both on the private venture-capital market and from the investment trust funds of a number of major universities.

Less successful in generating favorable reviews from potential investors has been Genentech's close rival, Cetus Corporation. Set up in the early 1970s in Berkeley, with a group of founders that included Donald Glaser of the University of California's Berkeley campus, and Ronald Cape, Cetus initially concentrated on general enzyme technology, moving into recombinant DNA research as the latter became more popular. Like Genentech, it was successful at raising money on the private venture-capital market (indeed, Robert Swanson, Genentech's chief executive officer, originally worked for Kliner and Perkins, the company which raised much of the venture capital for Cetus), and has research teams engaged in looking at ways of applying recombinant DNA techniques to commercial processes.

So far, however, the type of breakthroughs that scientists at Genentech have been able to announce seem to have escaped Cetus' research workers—and this appears to have been reflected in its Wall Street fortunes. When Genentech announced it was going public, Cetus said it had no plans to do so for several years, but changed its mind after watching the enthusiasm with which Genentech's shares were picked up. But the Cetus offering was much less spectacular when it came in March.

Over five-million shares were sold at an initial price of \$23, thus beating the market that highly successful Apple Computers had set the previous October. Since then, however, Cetus' shares have declined steadily in value, and are currently being offered at about \$13 each, having lost almost half their value in the initial six months.

The company's prospects may yet change dramatically as it begins to announce some of its research results, usually shrouded in secrecy until a patentable invention has been made. But some analysts seem to have been taking the lack of any such announcement so far as evidence that the company may be running into greater difficulties than it had anticipated in its research, particularly in its efforts to stimulate the artificial production of interferon, widely touted—but as yet unproven—as a powerful anti-cancer drug.

In a move designed to boost the company's research
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CERN: The Politics of the New Big Machine

Geneva. The 12 national partners are going to take the plunge into a new phase of development for the vast European Center for Nuclear Research (CERN)—construction of the long-awaited Large Electron-Positron storage ring, LEP, as it's called, at a cost of some \$400 million. But, as is the tradition in CERN politics, nothing comes easily, and now, to the usual mix of squabbling, has been added the issue of local environmental opposition.

At a meeting here in June, an immediate go-ahead for the project was supported by eight of the member nations: Austria, Belgium, France, the UK, Greece, Italy, West Germany, and Switzerland. The remaining members, Denmark, the Netherlands, Norway and Sweden, expressed no opposition, but said that they were not yet authorized ready to give their agreement. Another meeting, in October, is expected to give unanimous support to the project.

The bureaucratic infighting that went on before the vote illustrates something of the changing nature of European science. The key issues were the old timers of centralization versus nationalism, and as always, competition with the USA, plus the addition of environmentalism.

The technical worth of the project is not in question. No electron-positron storage ring today can achieve an energy of much over 20 GeV per beam. LEP is designed to take this to 50 GeV in a first phase by the late 1980s, with the potential to raise it to 130 GeV if appropriate superconducting acceleration systems become available.

When interest in LEP first appeared several years

ago, CERN administrators would have been glad to just tack the funding for it onto their existing budget. But this was ruled out for two reasons. In the economic slowdown of the '70s, European politicians were not willing to drastically increase their outlays for what they considered an abstruse area of science. And science ministers didn't want to ask for additional funds to keep purely national projects going while providing for LEP.

CERN's decision was to find a way to build LEP without increasing the budget above the rate it would have to grow just to meet inflation. This way out would mean cutting back work with some of the older machines at CERN. The decision was readily accepted in CERN councils, for since the organization's founding in 1954, it has regularly tried to have the latest machines for the laboratory's 1500 visiting physicists from Europe and elsewhere.

High-energy physicists in Europe agreed almost unanimously that this cutback of other programs at CERN for the sake of an apparently low-cost LEP was the best thing to do. Without LEP they would have reduced access to world-class machinery. Few European science ministers were willing to risk their international grandeur by saying no to this massed science support.

However, even with this belt tightening at CERN, some national politicians felt that it would be difficult to maintain spending levels for both national labs and the Geneva facility. Their concern was based on past experience, since the UK, for example, had cut back on funds for its own Rutherford lab to come up with the

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WALL STREET *(Continued from page 2)*

efforts and strengthen its links with academic researchers—many of whom are proving reluctant to give up faculty positions, even for lucrative inducements—Cetus has now set up a new company, Cetus Palo Alto Corporation, near the Stanford University campus. The principal adviser to the new company will be Stanford Professor Stanley Cohen; a number of his fellow faculty members have been recruited to the Cetus Scientific Advisory Board.

Cetus is clearly hoping that these strengthened ties will help provide the magic touch which, so far, seems to have eluded the company. CPA, as its new subsidiary is called, will work on the development of new methods for making antibiotics, research into neuropeptides, and new diagnostic tests for viral, bacterial and protozoic infections—relatively pragmatic goals compared to some of the more ambitious research programs that have been discussed, but with more clearly-defined market potential.

Wall Street's reaction remains to be seen. There is no shortage of investors prepared to back genetic engineering companies as they emerge. Harsanyi points out that DNA Sciences had little difficulty in raising most of the initial capital it was seeking. But more detailed questions are being asked about where the money is going, and more investors are listening to analysts who advise caution. Several are pointing to the recent experience of Ray Dirks of the securities firm John Muir, one of the most aggressive promoters of high-technology stocks, which managed to raise over \$100 million in new stock issues over the past 18 months—but overextended itself to such an extent that its activities have been closed down by the Securities and Exchange Commission. One of Dirks' most active salesmen was ex-Yippie Jerry Rubin, who was quoted in January as looking for "financing for the socially aware risk takers who will become tomorrow's titans." Judging by recent events, potential investors in genetic engineering are now looking for results rather than promises.—DD

...Nearby Towns Frown on Plans for Digging

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needed contribution for CERN. In fact, with the exception of the DESY lab in West Germany, which still operates world-class facilities for international teams, the trend in Western Europe has been for national labs to stop operating accelerators or storage rings. Rather, they act as centers where large detection systems can be built before being used on the international machines, and where large computer centers can be installed.

But the argument about reduced national laboratories slowly withered away, as most high-energy physicists were eager for working visits to CERN, liked the conditions there, and enjoyed the intellectual sparkle that was to be found in such an international center. Even the French government could not for long push nationalism as an argument against LEP when its own physicists were enthusiastic internationalists.

Another argument against supporting LEP, even within the present inflation-adjusted CERN budget, came from a few scientists outside of the physics community. For supporting LEP, they argued, would mean a guarantee of supporting physics at the high levels

dating back from the '60s, which, in an era of stagnant overall science budgets, could mean problems for other scientific researchers who sought increased funds. However, these complaints from other fields, though undoubtedly heartfelt, failed to attract any interest in the tightly knit ranks of Europe's science establishments, and beyond that, in political circles.

Meanwhile CERN itself showed, with good reason, that money spent on its projects did not go off into a void, but returned with a good multiplier effect to the contributing economies. In a report, "A study of Economic Utility Resulting from CERN Contracts," by H. Schmeid, CERN, Geneva, the economic "spin-off" of CERN's expenditures was measured by a utility index. This was given as the additional sales and savings in cost that firms gained from dealing with CERN. The overall ratio of utility to contract price was 4.2, with variations from 1.7 for cryogenic and super-conducting equipment, up to 31.6 for electro-mechanical devices. The statistics were clear, and the report was judiciously distributed.

The LEP project also had to survive local opposition on environmental grounds. Although CERN takes power from the French and Swiss electrical grids, which are connected to the European grid, several citizen groups in Geneva complained that CERN's vast energy needs might cause problems for the city's own energy needs. In response to this, CERN officials pointed out their lab now uses an amount of energy equivalent to 44 per cent of what was supplied through the Geneva grid. No ill-effects were yet seen. And taking into account the growth of Geneva's own consumption by the time LEP is finished, as well as the unplugging of several older machines at CERN, this figure would drop to 42 per cent. This is the sort of argument that convinces the Swiss, and the case has largely been dropped.

Another complaint, less easily resolved, comes from French townships which think they might be affected by the digging of the 27-km tunnel (which straddles the Franco-Swiss border) needed to house LEP. A court order was obtained shortly after the governing council meeting in late June that rather embarrassingly required CERN to stop working on several of the holes being dug for analysis of the underlying rock structure. That case is still before the courts, though an outcome favorable to CERN is expected because of the French judiciary's tendency to decide cases as Paris dictates.

Despite these particular arguments, dealing with sovereignty, centralization and environmentalism, perhaps the key force propelling LEP into acceptance is the work being done on the newest generation of accelerators in the US, and to some extent the Soviet

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DOE Fills More Top Posts

A government department that's supposed to plan its own disappearance is not in the strongest recruiting position, which may explain why, well into the first year of the Reagan Administration, the Department of Energy has just been getting around to swearing in some of its upper-level chiefs, including several for key R&D jobs.

Presiding last month at a ceremony for a batch of six, Energy Secretary James B. Edwards administered the oath to:

Shelby T. Brewer, 44, Assistant Secretary for Nuclear Energy, formerly in DOE's Office of Nuclear Energy as Director of Plans and Evaluation.

J. Erich Evered, 28, Administrator, Energy Information Administration, 28, an oil and gas engineering consultant with the CER Corp., Las Vegas.

R. Tenney Johnson, 51, General Counsel, a private-practice lawyer, formerly general counsel for NASA and the since-abolished Energy Research and Development Administration.

Herman E. Roser, 59, Assistant Secretary for Defense Programs, formerly manager of DOE's Albuquerque Operations Office, which directs all nuclear-weapons production.

James G. Stearns, 59, Director, Office of Alcohol Fuels, a longtime California state- and county-level executive, formerly served as California Secretary of Agriculture and State Services when Reagan was Governor.

Alvin W. Trivelpiece, 50, Director, Office of Energy Research, formerly Vice President of Science Applications, Inc., La Jolla, California; from 1973-75 was with the Atomic Energy Commission as Assistant Director for Research in the Division of Controlled Thermonuclear Research.

France: Expanded Power for New Science Chief

Paris. Jean Pierre Chevenement, the founding chief of France's newly created Ministry of Research and Technology, has quickly manifested a penchant for empire building, but with mixed results so far.

His potential, however, should not be underrated, for prior to his elevation in the new Socialist government, he was in charge of research budgets in the Chamber of Deputies, and is thoroughly familiar with the intricacies of research financing. His Ministry, already the most powerful of its kind in western nations, could go a long way, perhaps even to fulfilling Chevenement's vision of a French version of Japan's superpowerful Ministry of International Trade and Industry.

Leader of the left wing of the Socialist Party—the wing that pushes for nationalization of large private enterprise with the greatest conviction—Chevenement is also one of the strongest supporters of the nuclear power program that was inherited from the previous government.

Nuclear power was cause of disagreement between Chevenement and the interregnum Minister for Industry, Pierre Joxe, following cancellation of the Plogoff nuclear project, located in the uppermost tip of Brittany. Plogoff had become the main target for anti-nuke demonstrations and scuffles with the police were frequent. Between two ministers of similar temperament, both belonging to the left wing of the Socialist party, conflict was inevitable, especially since under the seven-year reign of Giscard d'Estaing the Ministry for Industry had dominated the management of R&D funds. With the first reshuffling of positions, to accommodate Communist ministers in the government, Joxe

left office, and returned to being a member of Parliament.

His replacement, Pierre Dreyfus, senior President of the Renault automobile firm, has not been much more conciliatory. Negotiations to determine which of the two ministers would direct the powerful Atomic Energy Commission have been especially laborious. After weeks of discussions, Prime Minister Pierre Maurois rendered a decision worthy of King Solomon: he himself would take charge of the Commission. This is an additional element for anxiety among nuclear researchers at a moment when the government has announced it would suspend construction on five nuclear plants and has let it be known that the Super Phoenix supergenerator will be the last of its kind.

Meanwhile, Dreyfus has surrendered to Chevenement both the Delegation for Innovation and Technology and the National Agency for the Betterment of Science, agencies which his predecessors had patiently built up. These are agencies whose main function is the promotion and the financing of applied research and the development of prototypes within middle- and small-size industries. The Ministry for Industry will be compensated with control over a rather large number of public enterprises which do a relatively large amount of research. In fact, the 12 industries which the government is going to nationalize in the Fall spend more than \$1.2 billion on R&D. They are among the innovation industries: Dassault for aeronautics, Thomson and ITT France for electronics, CII-Honeywell Bull for data processing, Rousseil-Uclaf for pharmaceuticals, etc. These nationalizations will have the effect of doubling the importance of industrial research under public control.

The new "public industrial sector" will comprise at least a third of the national R&D potential. Add in the fact that the government itself conducts the most essential part of basic research, in the universities and its own labs, and it turns out that 70 to 75 per cent of the total French R&D effort is under government control. Indeed, through the system of financial aid to research in private industry—the "nationalizable" industries received 83 per cent of 1979's public aid—the Administration already has a dominant influence on the orientation of industrial R&D.

Chevènement, however, has not obtained any great powers vis-a-vis large public industries. According to the official text listing his duties, he is only "necessarily consulted on research programs for national industries." On the other hand, with regard to basic research agencies, his role could be much greater than that of his predecessor, since he oversees the General Delegation for Scientific and Technological Research, the Delegation

CERN

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Union. Particular attention goes to the ISABELLE proton-proton storage rings of several hundred GeV at Brookhaven (though trouble-plagued), the upgrading to 1000 GeV of the Fermi proton synchrotron, and the work on a 3000 GeV proton synchrotron in Russia which uses the existing 76-GeV machine at Serpukhov as the injector. LEP nicely complements these machines, and would fit smoothly into a world where each power bloc has one, or at most two, of the most important research machines. In this equation of science with status, the mere building of LEP guarantees that Western Europe is considered such a power bloc. This is something that all CERN's member countries are only too glad to have reaffirmed.—David Bodanis

(The author is a free-lance science journalist based in Paris.)

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...Including Added Authority on R&D Budgets

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tion for Innovation and Technology, the Scientific Information Mission, and biggest of all, the National Center for Scientific Research (CNRS) and its 32,000 researchers.

The last acquisition was quite a coup, since the CNRS had traditionally been controlled by the Ministry of Education. When news of the change in control over this great network for basic research became known, there was no lack of petitions circulating through the laboratories denouncing the separation between research and higher education. (Research done solely by the universities and conducted by professors will remain under the control of the Ministry of Education.)

The large public agencies for specialized research, like the National Center for Space Studies (CNES), the National Institute for Medical Research (INSERM), the National Center for Oceanic Exploitation (CNEXO), the National Institute for Agronomic Research (INRA), etc., will see, according to official documents, "their funds registered with the Budget of the Ministry of Research and Technology." Previously, their budgets had been prepared and managed by cabinet ministers (Industry, Health, Agriculture, etc.). Thus, the new situation is very confusing.

It is clear that this is the outcome of a long negotiating process. Upon arriving at his new post, Chevenement assigned Roland Morin, a senior director of the General Delegation for Scientific and Technological Research (roughly similar to the White House

science office) to define the duties of the Ministry. Morin, frustrated for having been pushed out of his post three years ago under pressure from the then-reigning technical ministers, and mainly the Minister for Industry, Andre Giraud, took his revenge by proposing a first draft of the duties of the Ministry of Research and Technology in which all the R&D agencies were placed under the sole control of Chevenement. Two whole months of protests and negotiations within the seraglio of the managers of public research were needed before it was possible to limit the ambitions of the new team. Result: the direction of the civil research agencies was placed under double command. Instead of negotiating their budget only with the technical ministry overseeing them and the Ministry of the Budget, they will also have to negotiate with Chevenement's ministry. But no one can say, before having seen a complete cycle of this budgetary preparation, who will make the final decisions. The bets are that having two speakers in front of him instead of only one, the Minister for the Budget will find it easier to ferret out details that might otherwise remain obscure.

For the moment—it's vacation time in France—the unions haven't issued any statements on this reorganization. However, the National Union of Scientific Researchers, with a man from the extreme left at the head of the Ministry of Research and Technology, has seized the opportunity to demand from him "the firing of the directors of the large agencies for scientific research."

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In Print

Statistics on Research and Development Employment in the USSR (87 pages, \$4.50), most up-to-date report on size and disciplinary makeup of Soviet science and technology, prepared by Louvan E. Nolting and Murray Feshbach, Foreign Demographic Analysis Division, US Bureau of Census. (Feshbach has since joined the Center for Population Research, Georgetown University.) Authors warn that "precise comparison of Soviet and US figures is out of the question," but in what's described as "an approximate comparison," they conclude that in scientists and engineers employed in R&D, the Soviet total for 1979 tops the US by about 57 per cent. Available from: Superintendent of Documents, USGPO, Washington, D.C. 20402. (Specify Series P-95, No. 76.)

Consistent Criteria Are Needed to Assess Small-Business Innovation Initiatives (86 pages), another of those wondrously opaque reports from the General Accounting Office, whose acting head, in an introductory letter, says the report aims to "examine the conditions

that influence the ability of small businesses to innovate and provide criteria for assessing the extent to which Federal initiatives are likely to foster innovation by small businesses." Available without charge from: US GAO, Document Handling and Information Services Facility, PO Box 6015, Gaithersburg, Md. 20760 (specify PAD-81-15).

Survey of Science and Technology Issues Present and Future (553 pages), staff report prepared for House Science and Technology Committee, ranges worldwide to cite just about any issue, anywhere, that might involve science and technology. Available without charge from: Publications Clerk, Committee on Science and Technology, 2321 Rayburn House Office Building, Washington, D.C. 20515.

Federal Funds for Research and Development Fiscal Years 1979, 1980, 1981 (48 pages), the National Science Foundation's 29th annual compilation of federal R&D spending, including amounts by agency, for what purposes, and geographic spread. Single copies available without charge from: NSF, Division of Science Resources Studies, Washington, D.C. 20550.

...A Three-Step Plan for Boosting Research

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Chevenement, who is not in a hurry with regards to such matters, and who, anyway, doesn't have the power to conduct a swift purge, was angered by the demand. Four out of France's five Nobel Prize winners have protested against this union demand, seeing it as a bit too bold. The dismissal and hiring of presidents and directors in the field of research in France is generally conducted in a very discreet manner.

Despite the ambiguities, the Ministry of Research and Technology controls a machine which is much more powerful than any under previous governments. The goal determined by the French President during his electoral campaign is, in effect, not insignificant: to dedicate 2.5 per cent of the GNP to research by 1985. In line with this, Chevenement plans three steps.

First: A revision of the 1981 budget plan, to provide for hiring 525 extra employees in the field of public research, one-third researchers, two-thirds engineers and technicians. This is no less than double the number of jobs provided for in the 1981 budget set under Giscard d'Estaing.

Second: The preparation of a "good" 1982 budget for research. Despite a few token generosity, all agree that the first budget of the Socialist government will be lean. Only the ministries of Culture and of Research and Technology will see their pieces of the pie enlarged. The final figures, which will be presented to the Parliament in the Fall, have not yet been determined, but Chevenement's dynamism has awakened the admiration of his colleagues and the Prime Minister and this probably guarantees him good results. It is nonetheless certain that rate of growth of the 1982 budget will be below what's necessary to put the budget on the correct trajectory to attain the 2.5 per cent of the GNP in 1985. (Curiously, no one has yet been questioned on the pertinence of such a goal, whose sole virtue is that of emulating the US and Japan.)

Third: To build support for his goal of growth, Chevenement wants to enact a planning law for research and technological innovation which would be brought to the Parliament in 1982 and which, according to the Minister, "would be preceded by much consultation with the scientific community and even more generally with all those who participate in research." A planning law determines the outlook of a sector's budget over a period of several years.

The consultation with the scientific community should take place about January 15, 1982. But the drafting of the planning law has already started within the various official departments. It should acquire some firmness after a "National Conference" takes place in Paris later this year. The idea of a large conference on

research and technology was formulated by Francois Gros, the Director General of the Pasteur Institute, while he was the scientific counsellor for Francois Mitterand during the election campaign. Gros also is in charge of the Conference's Organizational Committee as well as being the Prime Minister's counsellor (but it is rumored, he is a bit disappointed with this post).

Chevenement, however, is not waiting to state his platform. "The important thing," he says, "is to dispose of a number of programs" so that funds can be released for others. Among the favored candidates he cites are biotechnology, microelectronics, and new energy sources, plus aid to small business firms. All in all, he'd like to boost their support \$150 million in 1982.

These projects have caused a certain amount of perplexity in the business world. There is no lack of high-quality long-term research and ideas for the future in the three sectors mentioned by the Minister. On the other hand what is lacking are the means for immediate development and markets for the products which are nearing production. The case of microelectronics is a typical one: The labs are full of projects for 1990 components, but industry doesn't have any clients for next year's components. This is because the new Minister for the Budget, Laurent Fabius, another strong personality within the Government, has imposed drastic reductions on the Administration's equipment programs. Even the military will have to be restrained in its orders. The "telematic" program and especially the project to give telephone subscribers an electronic directory (a simplified video terminal) in order to avoid the distribution of voluminous paper directories is being threatened. Computer equipment for high schools was suspended in June, when the Minister for Education decreed installation of micro-computers be slowed to allow for better teacher education. Of course, the delay will be recovered...later. The same goes for the innovation industries to whom the Government is proposing a distant brilliant future, thanks to research, by promising them money drawn from the supply which is the guarantee for their immediate survival. This contradiction shows up with regularity in the budgetary negotiations between the Minister for the Budget and the "technical ministers." Meanwhile, Chevenement dreams of creating a French version of Japan's Ministry for International Trade and Industry, a ministry which, according to him, "would have industry as its aim and which would be concerned with industrial production, a ministry which would act as counterweight to the Ministry of Economics and Finances."

Jean Pierre Chevenement has succeeded in his role as Minister for Research. However, he has not yet shown that he is also Minister for Technology.—FS

In Quotes: Rand Study Cool to High-Tech Export Curbs

The following is from a Rand Corporation report to the Defense Department, Selling the Russians the Rope? Soviet Technology Policy and US Controls, by Thane Gustafson. (The title question comes from Lenin's remark about capitalists being so greedy that they'd sell the rope for their own hanging.)

"It is worth bearing in mind that in the total volume of Western high-technology exports to the Soviet Union, the United States is a small player. American high-technology exports to the Soviet Union in 1979 amounted to \$183 million (\$270 million to Eastern Europe as a whole), about one-tenth the level of Soviet imports of advanced machinery and equipment from West Germany, France, and Japan combined. . . .

"History teaches that the control of technology transfer is at best a rear-guard action, achievable (and then only briefly) at the cost of regulations and secrecy that carry harmful side-effects of their own....The case for export controls is strongest in areas in which the United States stands to make near-term military gains and in which the United States has a clear lead over other Western countries. As one moves outside this zone, toward technologies that afford the Soviets longer-term industrial gains and that are not areas of clear American superiority over the rest of the West, the benefits of export controls become more diffuse. . . .

"...favorable climates for innovation, where they exist, are fragile. Regulation, however well-intentioned, introduces screens and filters between the perception of an opportunity for innovation and the inspiration and the incentive to take advantage of it. Consequently, if the national purpose is to maintain the United States' technological lead, our first concern should be to remain good innovators ourselves. We should beware lest we hobble ourselves, as the Soviet system has so clearly succeeded in doing in the greater part of its industry."

Public-Interest Group to Scan Big Four of Health Charity

The big four of tin-cup rattling on the health-charities scene—the American Cancer Society, the American Heart Association, the March of Dimes, and the American Lung Association—are in for a going over by one of Washington's sharpest-shooting research and advocacy organizations, the Center for Science in the Public Interest.

CSPI, which has previously concentrated on tormenting the Food and Drug Administration and the Department of Agriculture for inattention to nutritional safety, has set up a special group for the new task. Titled the Health Charities Reform Project, it's headed by Richard Pollock, former Director of Ralph Nader's Critical Mass Energy Project. The project is supported by a one-year \$50,000 grant from the Washington-based Public Welfare Foundation, plus assistance from CSPI.

The goal, Pollock told SGR, is to prod the charities into putting some of their substantial resources into lobbying for public-health measures, instead of just adding to the federal government's generally bountiful support of health research. Pollock noted, for example, that the American Cancer Society, with an annual take of some \$180 million a year, tends to shun Capitol Hill issues concerning restrictions on carcinogens. In fact, in 1977, when the Food and Drug Administration sought a ban on saccharin, the ACS, never inclined to clash with industry, joined the opposition.

In a recent article in the CSPI magazine *Nutrition Action*, CSPI Director Michael Jacobson observed that "The health charities are not perspiring much in the battle against killer diseases. To varying extents, they are all suffering from serious, perhaps terminal, cases of organizational sclerosis and intellectual paralysis."

CSPI and the Health Charities Reform Project are at 1755 S St. NW, Washington, D.C. 20009; tel. (202) 332-9110.

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